Work Order ID 76247 *76247 Page 1 November-07-11 3:31:58 PM Item ID: D212-664-107 Accept *N900040100* Setup Start Revision ID: Stop Crosstube Low Standard Fwd Item Name: Start Date: 07/11/2011 Start Otv: 1.00 **Cust Item ID: Required Date:** 21/11/2011 Req'd Qty: 1.00 **Customer:** Reference: Run Start . Process Plan: M.C. J Date: 11 11 07 Tooling: Approvals: Date: Stop Date: SPC (Y/N): Date: Sequence ID/ **Operation** Set Up/ Tool ID Reject Tool # Plan Reject Accept Insp. **Work Center ID** Code Qty. Number Description **Run Hours Qty** Stamp **Draw Nbr** Revision Nbr D212-664-147 Rev B (DEO) 100 0.00 DOCUMENT CONTROL *100* 0.00 DC Memo Document Control Photocopy bluefile and create labels as per PPP D212-664-107 CHG00 + 055 9562 110 0.00 Packaging *110* Packaging 0.00 Memo Packaging 120 0.0012-3-14 BENDING MACHINE - CROSSTUBES *120* CNC Bend 2 0.00 Memo

Bend tube as per Dwg D212-664-107 using CNC bender program 212-107

0

CNC Alpha 160 Bender

W/O:		WORK ORDER CHANGES				¥.	
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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			•				

Part No:		_ PAR #:	Fault Category:	NCR: Yes No DQA:	Date:
	Resolution:		Disposition:	QA: N/C Closed:	Date:

			ER NON-CONFORMAN	JL (11011)			
 	Description of NC		Corrective Action Section B	Verification	Annroyal	Ammanal	
STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	Approval QC Inspecto
	i						^
						,	
	STEP	STEP Description of NC Section A	STEP Description of NC Section A Initial	STEP Description of NC Section A Initial Action Description	STEP Description of NC Section A Initial Action Description Sign &	STEP Description of NC Section A Initial Action Description Sign & Section C	STEP Description of NC Section A Initial Action Description Sign & Verification Approval

Work Order ID 76247 November-07-11 3:31:58 PM				*762	247*						Page 2
Revision ID:		v Standard Fwd		Accept	*N900	040	100)* ፡	Setup Star Stop	1 1	S1*
Item Name: Start Date: Required Date: Reference:	07/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1 *1		Cust Item Customer:	ID:				IX	5)"
Approvals:	Process Pla	n:		Tooling: SPC (Y/N):		ate:		F	Run Star Stop	1/1	R1* R2*
Sequence ID/ Work Center II 130 *130* QC Quality Control	•	Operation Description QC15- Crosstube Dimen Memo	isional Check	Set Up/ Run Hours 0.00 0.00	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* Crosstubes Crosstubes		Crosstubes Memo 1-Cut tube a	s per inspection dw	0.00 0.00 g and deburr ends. ***ensure sa	ıw is square***	^					
. •		3-Drill tube DT8548 and 4-Transfer d 5-Identify cu 664-107. 6- Inspect su	DT8549 as per QSI	F8577 location #7 & # 212 ULF		JW		12-	3-19		714

W/O:		WORK ORDER CHANGES								
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approva QC Inspector			
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Part No:		PAR #:	Fault Category:	NCR: Yes No DQA:	Date:
	Resolution:		Disposition:	QA: N/C Closed:	Date:
NCR:		WC	RK ORDER NON-CONFORMAN	NCE (NCR)	

NCR:			WOTH OTHER NON-OOM OTHER MOTE							
DATE OTED		Description of NC		Corrective Action Section B	Verification	Approval	Approval			
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector		
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		35								
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	Work Order ID 76247 November-07-11 3:31:58 PM			*762	247*					Pag
Item ID: Revision ID: Item Name:	D212-664-10			Accept	*N900	040	100*	Setu	p Start Stop	14.71
Start Date: Required Date: Reference:	07/11/2011 : 21/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item I Customer:	D:				IV.57
Approvals:	Process Plan	n:	Date:	Tooling:		nte:		Run	Start Stop	"NR1"
Sequence ID/ Work Center II 150 *150* HandFXtube Hand Finishing Cro	D	Operation Description Crosstubes Chemical Co Memo	nversion	Set Up/ Run Hours 0.00	Tool ID		Plan Ac Code Qt			Reject Insp. Number Stamp
*160 *160*		QC3- Inspect Part Finish Memo		0.00 Sale	slis					

170

170

Quality Control

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

.... Salatr

W/O:			WORK ORDER CHANGES						
DATE	STEP	F	PROCEDURE CHANGE	В	by Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
Part No):	PAR #:	Fault Category:	NCR:	Yes No	DQA:	Date:		
	R	lesolution:	Disposition:	QA: N	C Closed:		Date: _		

NCR: WORK ORDER NON-CONFORMANCE (NCR)								
		Description of NC		Corrective Action Section B	3	Verification	Approval	A
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	Approval QC Inspecto
NOTE: D	Date & initial a	III entries			·· 4 -····	•	· · · · · · · · · · · · · · · · · · ·	·

Work Orde November-07-1					*	762	47*	•							Pag	e 4
Item ID: Revision ID:	D212-664-10	07			Accept		*NC	300	<u>040</u>	100)*	Setup	Start	*N	S1*	•
Item Name:	Crosstube Lov	w Standard Fw	vd										Stop	*N	S2*	•
Required Date:	07/11/2011 21/11/2011	Start Qty: Req'd Qty		*1* *1*				st Item l stomer:	ID:							
Reference:										_		Run	Start		_ 4.1	
Approvals:	Process Pla	ın:	l	Date:	Tooling	: _		D	ate:			Null		I <i>Л</i>	R1*	•
	QC:]	Date:	SPC (Y/	'N):		D	ate:				Stop	*N	R2*	•
Sequence ID/ Work Center II)	Operation Description	n		Set U Run	p/ Hours	To	ool ID	Tool #	Plan Code	Accept Qty	Re Qt		Reject Number	Insp. Stamp	
180		Outsource pro	ocess - NDT per	r QSI038 4.1	0.00	,								1		
180 Outsource2		N	1emo		0.00									N D	-03-	
Outsource process -	NDT	Is	sue P/O: ////	t Inspection as per Q DPI as per AS opy of NDT results t	TM 1417											
190					0.00									1	,	
190		Packaging										/	/1/1	13/	18-1	1
Packaging		M	1emo		0.00									- 5/1	9—6	
Packaging		E	nsure copy of N	NDT results attached	to work order.											
200		QC5- Inspect	part completen	ess to step on W/O	0.00											
* 2 00*			lama		0.00	87	12/16									

Inspect for damage & ensure results are as per Dwg D212-664-107

Quality Control

W/O:			WORK ORDER (CHANGES		-	•	_
DATE	STEP	1	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	:	PAR #:	Fault Category:	NCR: Yes	No DQ	A:	Date: _	
	R	esolution:	Disposition:	QA: N/C (Closed:		Date: _	

NCR:		WORK ORDER NON-CONFORMANCE (NCR)										
		Description of NC		Corrective Action Section B		Verification	Approval	Approval				
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	Approval QC Inspector				

Work Order ID 76247 November-07-11 3:31:58 PM			*762	47*				·		Page 5	
Item ID: Revision ID:	D212-664-1	07		Accept	*N900	040	1100) * s	Setup Sta	I M	S1*
Item Name:	Crosstube Lov	w Standard Fwd							Sto	^{op} *N	S2*
Start Date: Required Date: Reference:	07/11/2011 21/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item l Customer:	ID:					
Approvals:	Process Pla	ın:	Date:	Tooling:	D:	ate:		F	Run Sta	171	R1*
	QC:		Date:	SPC (Y/N):	D:	ate:			Sto	[%] *N	R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 Crosstubes		Crosstubes Memo		0.00				AS	13 -	3-15	
Crosstubes		1-Rivet Cuft A/R SIKA	fs as per Dwg D212-664- AFLEX -241/-291 BAT	147, with Sika flex in Betv CH: 【20813	veen tube & Cuff						
²¹⁵		QC5- Inspect part compl	eteness to step on W/O	0.00					\ \ \	- 100 ·	14
QC		Memo		0.00				-m	12	<u>- 03 ·</u>	17-

Quality Control

W/O:	-	WORK ORDER CHANGES								
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector			
							•			
Part No	:	PAR #: Fault Category:	NCR: Yes	No DQ	A:	Date: _				

NCR:		WORK ORDER NON-CONFORMANCE (NCR)										
		Description of NC		Corrective Action Section B	Verification	Approval	Annroval					
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Approval Chief Eng	Approval QC Inspector				
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Work Order ID 76247 November-07-11 3:31:58 PM				*76247*							Page 6
Item ID: Revision ID:	D212-664-1	07		Accept	*N900040100)* ፡	Setup Sta	1/3	S1*
Item Name:	Crosstube Lo	w Standard Fwd							Sto	p *N	S2*
Start Date:	07/11/2011	Start Qty: 1.00	*1*		Cust Item I	D:					
Required Date: Reference:	21/11/2011	Req'd Qty: 1.00	*1*		Customer:						
Approvals:	Process Pla	ın:	Date:	Tooling:	Da		_	F	Run Sta	1/1	R1*
	QC:		Date:	SPC (Y/N):	Da	ite:			Sto	*N	R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		SprayPaint		0.00	-			40			
220 SprayPaint		Memo		0.00				AS	12	- 3-	<u>3</u>
Spray Painting			de and outside crosstube a								
		2-Paint outs	ide crosstube with White I RIME: \1!00 e:\2!00								
230		QC14- Inspect Spray Pair	nt	0.00							
^{ос} *ЭЗП*		Memo		0.00 8 12/0	3/76						

Wrap in plastic bag to protect from scratches

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	• •	PAR #: Fault Category: NC	R: Yes	No DQ	A :	_ Date: _	

Resolution: Disposition: QA: N/C Closed:									
NCR: WORK ORDER NON-CONFORMANCE (NCR)	WORK ORDER NON-CONFORMANCE (NCR)								
DATE CTED Description of NC Corrective Action Section B Verification	Annyoval	Annroyal							
DATE STEP Description of NC Section A Chief Eng Chief Eng Section Section Section Section C Section C Section C	Approval Chief Eng	Approval QC Inspector							

Work Order ID 76247 November-07-11 3:31:58 PM				*76247*								Page 7
Item ID: Revision ID:	D212-664-1	07		Accept	*N900	1040	100	ገ*	Setup	Start	*N	S1*
Item Name:	Crosstube Lov	w Standard Fwd								Stop	*N	S2*
Start Date:	07/11/2011	Start Qty: 1.00	*1*		Cust Item	ID:						
Required Date:	21/11/2011	Req'd Qty: 1.00	*1*		Customer:							
Reference:												
Approvals:	Process Pla	nn:	Date:	_ Tooling:	D	ate:			Run	Start	17	R1*
	QC:		Date:	_ SPC (Y/N):	D	ate:				Stop	*N	R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Re Qt	-	Reject Number	Insp. Stamp
240				0.00								
* 740 * Crosstubes		Crosstubes Memo		0.00				Af	<u> </u>	12	- 3-	27
Crosstubes		1- Assemble	e as per Dwg D212-664-14	17								
			nating surfaces of support a ea with 4105S wash 'n' wip		it sandpaper,							
			pports with Proseal 890 per oseal 890 Batch: 12	r DSI9563 and QSI 015 0867								
		3- Torque be	olts as per dwg									
²⁵⁰ *250*		QC5- Inspect part compl	leteness to step on W/O	0.00				\bigwedge		12'	~ ~	27/2
OC : 11 1		Mome		0.00				W '	٠	10	_0)	

0.00

Memo

Quality Control

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W/O:			WORK ORDER	CHANGES				_					
DATE	STEP	PR	OCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector					
							:	•					
													
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Part No	:	PAR #:	Fault Category:	NCR: Yes	No DQ	A:	Date: _						
R		olution: Disposition:		QA: N/C C	Closed:		Date: _						
NCR:			WORK ORDER NON-COM	FORMANCE (NC	R)								

NCR:		WORK ORDER NON-CONFORMANCE (NCR)											
		Description of NC		Corrective Action Section B	Verification	Approval	Approva						
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	Approval QC Inspector					
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		`											

Work Order ID 76247 November-07-11 3:31:58 PM			*76247*						Page	8
Revision ID:	D212-664-10	07 v Standard Fwd		Accept	*N90004	010 0)* s	Setup Star	וניעו	
Start Date: Required Date: Reference:	07/11/2011 21/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item ID: Customer:				14(7)	
Approvals:	Process Pla	in:	Date:	Tooling: SPC (Y/N):	Date:		R	tun Start Stop	"NRT"	
Sequence ID/ Work Center ID 255 *255* Packaging Packaging	•	Operation Description Pick Kit Memo		Set Up/ Run Hours 0.00	Tool ID Tool	Code	Accept Qty	Reject Qty	Reject Insp. Number Stamp	
260 *260* QC Quality Control		QC4- 100% Inspect kits Memo	for completeness	0.00 Scz (c	7/28		(a)		

270

270
Packaging

Packaging

Memo

Packaging

Identify and pack for shipping as per PPP D212-664-107

KSPD-88-22

W/O:				WORK ORDER	CHANGES					
DATE	STEP		PR	OCEDURE CHANGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No):		PAR #:	Fault Category:	NCI	R: Yes	No DQ	A:	Date:	
	Re	esolution:		Disposition:	QA:	N/C C	Closed:		Date: _	
				WORK ORDER NON OOL	IFODRA NOF	· /NIA	D \			

NCR:		WORK ORDER NON-CONFORMANCE (NCR)									
		Description of NC		Corrective Action Section B	· · · · · · · · · · · · · · · · · · ·	Verification	Annyous	Approval QC Inspector			
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Approval Chief Eng				
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Work Orde				*762	247*							Page 9
Item ID: Revision ID: Item Name:	D212-664-10 Crosstube Lov	07 w Standard Fwd		Accept	*N900	040	100)*	Setup	Start Stop	1.71	S1* S2*
Start Date: Required Date: Reference:	07/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item : Customer:							
Approvals:	Process Pla	nn:	Date:	Tooling: SPC (Y/N):		ate:			Run	Start Stop	1/1	R1* R2*
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accep Qty	t Re	•	Reject Number	Insp. Stamp
280 *280* QC Quality Control		QC21- Final Inspection -	Work Order Release	0.00						12)	4 2	-4

N12-03-30

Dan Ac	ospac	5 Ltu					* •	•
W/O:			WORK ORDER (CHANGES				
DATE	STEP		PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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						<u>, , , , , , , , , , , , , , , , , , , </u>		
Part No):	PAR #:	Fault Category:	NCR: Yes	No DQ	A:	Date:	
	R	esolution:	Disposition:	QA: N/C	Closed:		Date: _	

NCR:		WORK ORDER NON-CONFORMANCE (NCR)									
		Description of NC	Corrective Action Section B			Verification	A				
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Approval Chief Eng	Approval QC Inspecto			
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· Picklist Print November-07-11 3:32:03 PM Work Order ID: 76247 *76247* Parent Item: D212-664-107 *D212-664-107* Parent Item Name: Crosstube Low Standard Fwd **Required Date: 21/11/2011** Start Date: 07/11/2011 Start Qty: 1.00 Required Qty: 1.00 IPP Rev:A New Issue 07.09.12 verified by: JLM Comments: IPP Rev:B ECN 1100 08-01-11 verified by: EC IPP Rev:C Ecn 1121 08-02-25 DD Verified by:ec IPP Rev:D 10.05.27 added pick kit DD verf:EC IPP Rev:E 11.10.17 added SEQ 215 DD verf:EC IPP REV:F 11.11.03 as per chg003 DD verf:EC Component Item ID/ Replacement Mfg/ Primary Last Route Unit of Qty on Qty per Kit Total Qty Item Name Location Item ID Purch Item Location Seq ID Measure Hand Qty Issued D212-664-107TRN Manufactured No 140 7.0000 Each B76249 *D212-664-107TRN* ** Crosstube Turning Detail Loc Qty Location Loc Code LG 74250 74572 75129

> 75130 75210

74249 75881

LG046

Manufactured

No

D3659-1

Location	Loc Qty	Loc Code
ST477 7703Z	24	
67005	3	
74737	8	
75173	13	

220

1

Each

24.0000

**

no 12/3/13

Date

Issued

Status

12-3-13

Page 1

W/O:		WORK ORDER CHANGES									
DATE	STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector				
	~										
Part No	•	PAR #- Fault Category:	NCP: Vas	No DO	۸٠	Date					

	Resolution:		Disposit	tion:	QA: N/C Clos	sed:	Date: _	· · · · · · · · · · · · · · · · · · ·			
NCR:		`\	WORK ORDER NON-CONFORMANCE (NCR)								
		Decement of NC		Corrective Action Section	on B	Verification		Approval QC Inspector			
DATE	STEP	Description of NC Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng				
		·						<u> </u>			
	†										

November-07-11 3:32:03 PM

Work Order ID: 76247

D212-664-107

Parent Item Name: Crosstube Low Standard Fwd

Purchased

Manufactured

No

76247

D212-664-107

Start Date: 07/11/2011

44

(H)

Required Date: 21/11/2011

Start Qty: 1.00

**

Required Qty: 1.00

AS 12-3-15

CR3212-4-06 *CR3212-4-06*

CHERRY RIVET

Parent Item:

119717

120521 Location Loc Qty ST311 678 112492 18 112794 360 119510 300

240

Each

240 174.7600 Each

678.0000

Loc Code

**

12-3-27

D3595-063-450

RUBBER CUSHION

D3595-063-450

17678		
Location	Loc Qty	Loc Code
LG	77.76	
67353	3	
68893	6	
70113	0.56	
71354	0.2	
74113	68	
LG055	97	
75597	97	

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W/O:			WO	RK ORDER CHANG	ES				
DATE	STEP	PR	PROCEDURE CHANGE			Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
						-			
Part No	:	PAR #:	Fault Categ	jory:	NCR: Yes	No DQ	A:	Date: _	
Resolut		esolution:	Disposition	:	_ QA: N/C	Closed:		Date: _	
NCR:			WORK ORDE	R NON-CONFORMA	ANCE (NC	R)			
	1	Description of NC	Corrective Action		on B	Vorifi	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date	& Sect	ion C	Chief Eng	QC Inspector
									1

November-07-11 3:32:03 PM

Work Order ID: 76247 *76247* Parent Item: D212-664-107 *D212-664-107* Parent Item Name: Crosstube Low Standard Fwd Start Date: 07/11/2011 **Required Date: 21/11/2011** Start Qty: 1.00 Required Qty: 1.00 MS21920-25 Purchased No 240 64.0000 Each ** *MS21920-25* 12-3-27 (4) Clamp(per MIL-DTL-8783C) 120475 Location Loc Qty Loc Code LG 58 113281 113282 118142 118183 119339 50 LG050 116264 117998 D2893-1 Manufactured No 240 Each 3.0000 2 *D2893-1* ** 12-3-27 2.75 Support 78561 (2) Location Loc Qty Loc Code LG052 3 72865 3 1 D3428-1 11.0000 260 Manufactured No Each **

Loc Qty

11

11

Loc Code

Location

73498

ST053

Dart Ae	rospace	Ltd						
W/O:			W	ORK ORDER CHANGE	ES			·
DATE	STEP	PRO	PROCEDURE CHANGE			Date Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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							.:	
Part No		PAR #:						
	Re	solution:	Disposition	n:	QA: N/C Clo	sed:	Date: _	
NCR:		1	WORK ORD	ER NON-CONFORMA	NCE (NCR)			:-
		Description of NC		Corrective Action Section	on B	Verification	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector

DATE STEP		Description of NC		Corrective Action Section B			Annroyal	Annroval
		Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector
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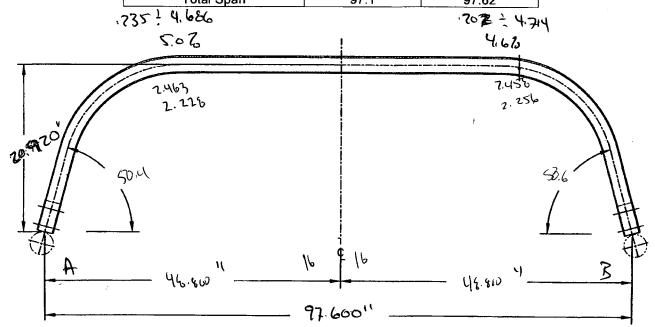
· Picklist Print Page 4 November-07-11 3:32:03 PM Work Order ID: 76247 *76247* *D212-664-107* Parent Item: D212-664-107 Parent Item Name: Crosstube Low Standard Fwd Start Date: 07/11/2011 **Required Date: 21/11/2011** Start Otv: 1.00 Required Qty: 1.00 86.0000 AN6-35A Purchased No 260 Each Location Loc Qty Loc Code ST342 86 118422 6 118838 30 119449 50 260 86.0000 No Each Purchased Location Loc Oty Loc Code ST342 86 118422 6 118838 30 50 119449 No 260 Each Purchased Location Loc Qty Loc Code 614 ST300 25 117677 118384 5 118927 48 118968 536 ST518 1000 1000 119075 AN960JD616 NAS1149D0663J Purchased No 260 Each 0.0000 **Shop Packet Print** Page 4 November-07-11 3:32:03 PM

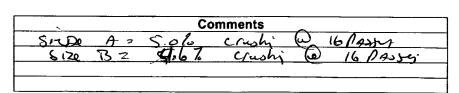
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W/O:			WC	RK ORDER CHANG	ES				
DATE	STEP	PROCEDURE CHANGE			Ву	Date	Qty	Approval Chief Eng / Prod Mgr.	Approval QC Inspector
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Part No: PAR #:		PAR #:	Fault Category: NO				A:	Date:	
Resolution:			Disposition	_ QA: N/C	QA: N/C Closed: Date: _				
NCR:			WORK ORDE	R NON-CONFORMA	NCE (NC	R)			
		Description of NC		Corrective Action Secti	1 Section B			Approval	al Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sigr Da	1& Sect	Verification Section C	Chief Eng	QC Inspector
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DART AEROSPACE LTD	Work Order:	76247
Description: Crosstube Low Fwd (205/212/412)	Part Number:	D212-664-107
Inspection Dwg: D212-664-147 Rev: B		Page 1 of 1

Required Dimension	Min	Max
Height	20.79	21.05
1/2 Span	48.55	48.81
Angle	49	52
Total Span	97.1	97.62





QC15 Inspection	
Date	1713/14

F	lev	Date	Change	Revised by	Approved
	Α	08.02.29	New Issue	KJ/JM 4.0	
	В	10.01.21	Dwg Rev updated	KJ X	1

W/O:			WC	RK ORDER CHANG	SES				
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Part No:		PAR #:	Fault Cate	jory:	NCR: Yes	No DQ	A:	Date:	
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ltem	Qty -147	Qty -147B	Part Number	Description
1	Х		D212-664-147	CROSSTUBE ASSEMBLY (205/212/412 LOW FWD)
2		X	D212-664-147B	CROSSTUBE ASSEMBLY (214 LOW FWD)
3	1	1	D6019-128	CROSSTUBE
4	2	2	D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	2	2	D3659-1	CUFF
. 7	4	4	MS21920-25	CLAMP (OR MS21920-26)
8	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
10	A/R	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6019-128

- PAINT OUTSIDE PER DART QSI 005 4.2 TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED. UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.

 7) WEIGHT: D212-664-147 = 24.2 lbs (PER IIN-D212-664)
- D212-664-147B = 24.2 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE
 WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD
- BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
 12) INSTALL D2893-1 SUPPORTUSING 0.03" TO 0.06" THICKLAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT. 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SUPFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 16) INSTALL D3659-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS
- 17) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

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NO_76249 M.C.J

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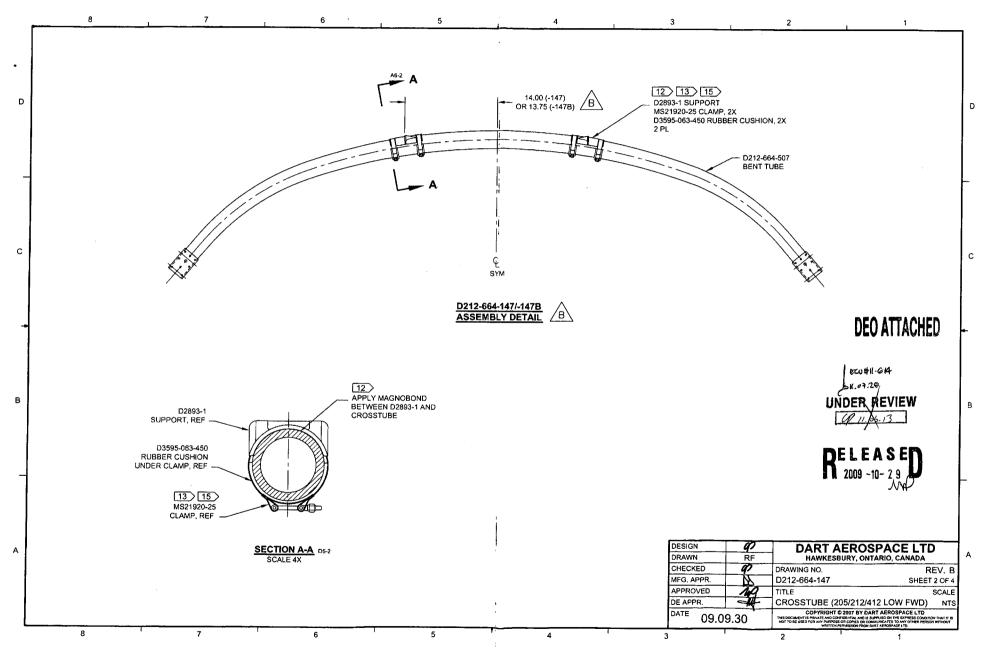
PER ECN#11.64 11.07,28 UNDER REVIEW

8	REVISE GENERAL NOTES/PART LIST; UPDATE TO CURRENT STANDARDS; ADD -1478 (ZN C4-2, D4-2)				09.09.30		
Α	NEW ISSUE				07.07.07		
REV.			DESCRIPTION	BY	DATE		
DESIGN P			DART AEROSP	ACE	LTD		
DRAWN RF		RF	HAWKESBURY, ONTARIO, CANADA				
CHECKE	ED.	9	DRAWING NO.		REV. B		
MFG. AF	PPR.	Z	D212-664-147	5	SHEET 1 OF 4		
APPROVED 10		10	TITLE		SCALE.		
DE APPR.		-//	CROSSTUBE (205/212/412 LOW FWD) NT				
DATE	09.09	9.30	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PROVINE AND COMPRETENTAL AND IS SUMPLED ON THE EXPRESS CONTINO THAT IT IS NOT TO BE USED FOR ANY DURNOSE OR COMMUNICATION TO MY OTHER POSSON WITHOUT				

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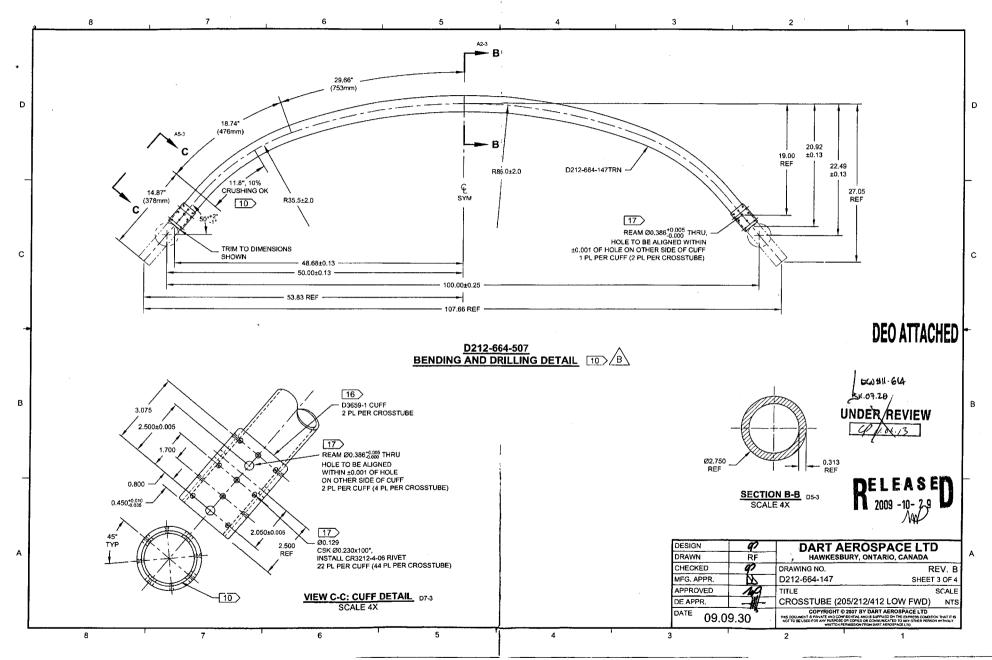
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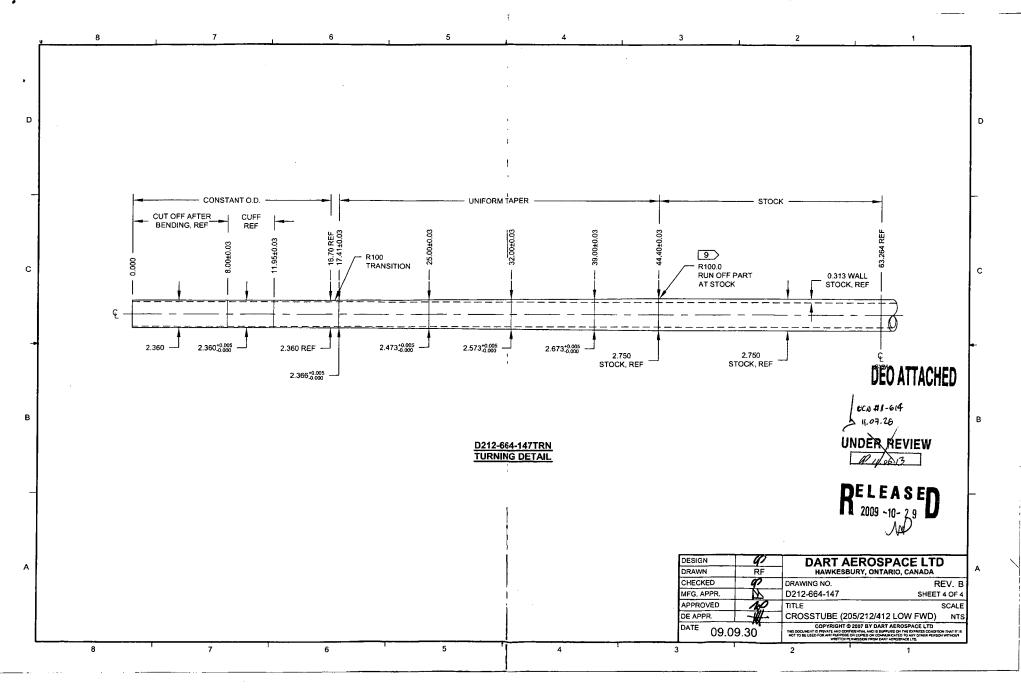
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76247

DRAWING NO.	TITLE		REV. B	DART AE	ROSPACE LTD	D.E.O. NO.		SHEET NO.	SCALE
D212-664-147	CROSSTU	BE ASSY (20	05 LOW FWD)	ENGINE	RING ORDER	D212-66	4-147- B -1	SHEET 1 OF 1	NTS
DRAWN	P	CHECKED	AS	MFG. APPR.	195	APPROVED	MP,	DE APPR.	
DATE 11.0	7.15	DATE /	11.07.20	DATE	11.07.21	DATE	11/07/14	DATE 11.07.21	

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

item	Qty -147	Qty -147B	Part Number	Description
				I
9	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023
				ADHESIVE (TEXTRON/BELL SPEC. 299-947-100,
			<u>.</u> :	TYPE II, CLASS 2 ADHESIVE)

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2893-1 SUPPORT: ABRADE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

WAS:

- 12) INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.



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Part No:	PAR #:	Fault Category:	NCR: Yes No DO	QA:	Date:
Resolution:		Disposition:	QA: N/C Closed: _	***	Date:

NCR:		WORK ORDER NON-CONFORMANCE (NCR)								
DATE	STEP	Described to AND	Corrective Action Section B			Verification	Approval	Approval		
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DART AEROSPACE LTD.

REFERENCE ONLY

IIN-D212-664 Page 23 of 25

5.2 STANDARD GEAR CROSSTUBES

ltem <	-107	-207	-209	Part Number	Description			
	x			D212-664-107	CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD FWD			
		x		D212-664-207	CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD AFT			
		·	х	D412-664-209	CROSSTUBE INSTALLATION, 412 STANDARD AFT			
6	1			D212-664-147	CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD FWD			
7		1		D212-664-247	CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD AFT			
8			1	D412-664-249	CROSSTUBE ASSEMBLY, 412 STANDARD AFT			
10	2			* D2893-1	SUPPORT			
11	4			* D3595-063-450	RUBBER CUSHION			
12	4		 	* MS21920-25	CLAMP (OR MS21042-26)			
13	(4			AN6-35A	BOLT			
14	/ 4		1	AN6-36A	BOLT			
15	16			MS21042L6	NUT (OR MS21042-6)			
16	<u> </u>			AN960JD616	WASHER			
				+ 000404	OURDOOT			
20	<u> </u>	2	·	* D2940-1	SUPPORT			
21		4		* D3595-063-530	RUBBER CUSHION			
22	<u> </u>	4		* MS21920-28	CLAMP (OR MS21042-30)			
23	ļ	4	<u> </u>	AN6-40A	BOLT			
24	 	2	ļ	AN6-41A	BOLT			
25	ļ	6		MS21042L6	NUT (OR MS21042-6)			
26	ļ <u></u> .	18		AN960JD616	WASHER			
30			1	* D2896-1	SUPPORT			
32	1	· · ·	2	* D3595-063-570	RUBBER CUSHION			
33			4	* MS21920-28	CLAMP			
34			2	* MS21920-30	CLAMP (OR MS21042-32)			
35			4	AN6-40A	BOLT			
36			2	AN6-41A	BOLT			
37			6	MS21042L6	NUT (OR MS21042-6)			
38			18	AN960JD616	WASHER			
39			2	* D3189-1	CHAFING SHIELD			
45	2			* D3659-1	CUFF			
46	 	2	2	* D3660-1	CUFF			
47	44	44		* CR3212-4-06	RIVET (M7885/3-4-06)			
48			44	* CR3212-4-07	RIVET (M7885/3-4-07)			
50	1 1	1		D3428-1	PLACARD			
			l	1 - 2 :- 2 :-	1 · · · · · · · · · · · · · · · ·			

*REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-147/-247 OR D412-664-249 ASSEMBLIES ABOVE NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AAI SKIDTUBES.

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Revision: **G** Date: 11.08.30

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LIQUID PENETRANT TEST REPORT

	a		· ,
· France		Å	Page 0F
CLIENT	AT APOSTE	_ DATE Mecol	1 15/12 TIME AM D' PM D
ATTENTION	LINDA LACELLE	ACUREN JOB NO	188-12-00067
Address (1997)	to ABBL DEEN	PO/WO No	** Commencer
	tuketishor, on.	Work Location HAC	SKES BURY.
			1417/Cij-63 REV./DATE 2505
PROJECT		<u> </u>	ADS MACHINE U PRO-
ITEM(S) EXAMINED	(2) c2055=45=3	(4) wach	NED SLEEVES
JOB DESCRIPTION	PROCEDURE NO. LT-202 REV./DAT	2008 TECHNIQUE	No. LT(24) REV./DATE
PART NO.	SEE RESULTS	_ MATERIAL JAN SS SI	THICKNESS 1042000
	Flurtice Theone Sent		
	MILED ON TON YOU YOU YOU	Externa 20	FACE.
TEST DETAILS			4~
METHOD FAMILY BRAND	FLUORESCENT VISIBLE	WATER WASH	☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
	DIA NATUUS DINIMUM DWELL TIME 4/30 Min	BLACK LIGHT S/N /6457	☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc HT ☐ TROUBLELIGHT ☐ OUTPUT>100 fc @ SURFACE
PENETRANT REMOVER	MINIMUM DRY TIME >10 Min	I. OTHER	
š	NON AQUEOUS AQUEOUS DRY	LIGHT METER S/N ノクラ	BBBB CAL DUE DATE 本代 ララ
TEST SURFACE	Non Aqueous 🔲 Aqueous 🗀 Dry		
SURFACE CONDITION	As Ground	☑ MACHINED □ SHOT	BLASTED Z CLEAN BARE METAL
SURFACE TEMPERATURE D	< - 4°C/ 20°F		(50°F TO 52°C/125°F □ > 52°C/125°F
	METRIC , 2 IMPERIAL)		
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# 770 30	- CBSS 748E /		<u> </u>
1 1-1-2	7 - 11-60-12-11		
1 7627		Siz/13/16	
176276	0 - C2085 MAZIV		
12 -4832			
17 7810	7 - SLEEUE'S V		
Scope of Services The agreement of Acuren Group Inc. to	perform services extends only to those services provided for in writing. U	uder no circumstances shall such services exten	d beyond the performance of the requested services. It is expressly understood
representations or warranties. Acuren	residus of oppular reflect the optitions of observations of Actiren Group II Group Inc. is not assuming any responsibilities of the owner/operator and	te, based on information and assumptions supp	fied by the owner/operator and are not intended nor can they be construed as
Standard of Care	к иген Отонр т.с ні по ечет япан ленген Огоир Inc. s набину т respec	of the services referred to herein exceed the an	rount paid for such services.
The state of the s	aren Group Inc. uses the degree, care and skill ordinarily exercised under Group Inc.	similar circumstances by others performing suc	h services in the same or similar locality. No other warranty, expressed or
SIGNATURES			
CLIENT REPRESENTATIVE	Andrew Sheldon A	Sella	DTR# =-687/7
TECHNICIAN (SIGNATURE):	PRINT	SIGNATURE -	REPORT
	The service		REVIEWED BY:
NAME (PRINT):	1 TECHNICIAN	2 ^{rab} TECHNICIAN	NAME 22 INITIALS
	CGSB LEVEL SNT LEVEL CGSB	LEVEL SNT LEVEL	
	CGSB REG. NÓ 6666 CGSB	REG. No]